Roll No. | | | | | | | | | | | | | **Total No. of Pages : 02**

Total No. of Questions : 09

B.Voc (Solar System Technology) (Sem.–2)

SOLAR PHOTOVOLTAIC POWER PLANTS

Subject Code : SST-204

M.Code : 91648

Date of Examination : 04-07-22

Time : 3 Hrs. **Max. Marks : 30**

INSTRUCTIONS TO CANDIDATES :

1. **SECTION- A is COMPULSORY consisting of TEN questions carrying ONE marks each.**
2. **SECTION-B contains FIVE questions carrying TWO AND A HALF marks each and students have to attempt any FOUR questions.**
3. **SECTION-C contains THREE questions carrying FIVE marks each and students have to attempt any TWO questions.**

SECTION-A

1. Write briefly :

a) What are the 5 main components of a solar array?

b) Explain the types of solar modules.

c) Explain the different types of solar photovoltaic systems.

d) What are the 4 main types of solar energy?

e) Why is solar power considered sustainable?

f) Explain some applications of solar thermal power generation.

g) Which type of energy conversion takes place in a solar cell?

h) Calculate Fill Factor using the data: P_{max} = 15 W, V_{oc} = 18 V, I_{sc} = 4A.

i) Which PV module is better: monocrystalline or polycrystalline? Why?

j) State the function of a photovoltaic cell.

SECTION-B

2. Discuss various government schemes and policies for solar energy.

3. How do you build a stand-alone solar system? Explain in brief by using block diagram.

4. Discuss about the V-I and P-I characteristics of a solar power plant.

5. A single solar cell (10 × 10) produces a voltage of 0.5 V and a current up to 2.5 A°. If the solar insolation is 800 W/m^2, calculate the efficiency of the solar cell.

6. Explain the maintenance procedure of a solar PV power plant.

SECTION-C

7. How does a concentrated solar power plant work? What are the key requirements?

8. What is solar energy? What is the total amount of solar irradiation received by earth on a daily basis? How much of that can be harvested economically?

9. As referred to Indian context, explain the historical development of solar power plants.

NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.